REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-10 are pending in this application. Claims 1-6 are withdrawn. Claims 1-10 are amended by the present amendment. As amended Claims 1-10 are supported by the original claims, no new matter is added.

In the outstanding Office Action, the specification was objected to; Claim 10 was objected to; Claims 7-10 were rejected under 35 U.S.C. §103(a) as unpatentable over Wallis (U.S. Patent Application Publication No. 20010022023) in view of Turner (U.S. Patent No. 4,869,422); and Claims 7-10 were rejected under 35 U.S.C. §103(a) as unpatentable over Salt (U.S. Patent No. 5,711,068) in view of Turner.

With regard to the objection to the specification, section headings are added herewith, and the abstract is amended herewith to conform with U.S. practice. Accordingly, the objection to the specification is believed to be overcome.

With regard to the objection to Claim 10, Claim 10 is amended herewith to recite "according to claim 7." Accordingly, the objection to Claim 10 is believed to be overcome.

With regard to the rejections of Claim 7 under 35 U.S.C. §103(a) as unpatentable over Wallis in view of Turner and Salt in view of Turner, those rejections are respectfully traversed.

Claim 7 recites in part:

> a) providing at least two primary parts, said two primary parts having two faces and a periphery;
> b) depositing a stop-off product in a predefined pattern on at least one face among each pair of those faces of the primary parts that are intended to face each other;
> c) providing a sealed reservoir having an open end, the reservoir being produced so as to be non-deformable at the temperature and pressure at which the material of the primary parts undergoes diffusion bonding;

> d) joining said primary parts together around their periphery with the exception of a place forming a passage, the primary parts forming a stack and defining, pairwise between them, a cavity that communicates with the passage;
>
> e) placing the stack and the reservoir in a chamber under a partial vacuum of the chamber, thereby the internal volume of said reservoir is placed under a partial vacuum;
>
> f) making a sealed join between the open end of said reservoir and the passage of the stack in the chamber under partial vacuum, so as to form an assembly allowing communication between the internal space of the reservoir and the cavity;
>
> g) heating said chamber to the thermal degradation temperature of the binder, thereby allowing the gases resulting from the degradation of the binder to be sucked into the reservoir;
>
> h) heating said chamber to the diffusion bonding temperature and pressurized to the diffusion bonding pressure, which causes said stack to undergo hot isostatic pressing diffusion bonding;
>
> i) separating said reservoir from the bonded stack;
>
> j) placing the bonded stack in a mould; and
>
> k) bringing the mould to the superplastic forming temperature and an inert gas is injected under the superplastic forming pressure via the passage in the cavity, whereby the stack undergoes inflation and superplastic forming, allowing a blank of the mechanical part to be obtained.

The outstanding Office Action conceded that neither Wallis nor Salt teaches or suggests "providing a sealed reservoir," "making a sealed join between the open end of said reservoir and the passage of the stack," or "separating said reservoir from the bonded stack." The outstanding Official Action cited Turner as describing these elements.[1] However, it is respectfully submitted that Turner is not analogous art to the invention recited in Claim 7.

"In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor, or, if not, be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992), see also MPEP §2141.01(a). In the present case, it is respectfully submitted that Turner is clearly not in applicant's field of endeavor and does not

[1]See the outstanding Office Action at page 6, line 17 to page 7, line 12 and page 9, lines 3-19.

disclose a solution to the problem of removing residues of the degradation of a stop-off product from the bonding site of surfaces to be bonded by diffusion-welding and superplastic forming techniques.

In order to manufacture a hollow titanium blade from two plates (primary parts) by diffusion-welding and superplastic forming techniques, some stop off or anti diffusion material is used in order to prevent welding at specific locations. The periphery of the two plates is joined, except for a passage which is linked to a sealed reservoir which is only open at one end. Therefore, the sealed reservoir is in communication with the cavity formed between the two primary parts, through said passage and said open end. In this regard, it is important to point out that, according to the invention recited in Claim 7, the sealed reservoir is only open at the location of the passage (for communication with the cavity between the two plates, but not with any other outside system including pipes or anything else). To suck the gases resulting from the degradation of the binder sufficiently, this closed reservoir should be of sufficient size. Then, a sealed reservoir is used per each hollow blade to be manufactured, a joined unit (reservoir + two primary parts) being placed in a vacuum chamber, under isostatic pressure HIP, for making the electron beam welding joining the parts together. Further, it is respectfully noted that the sealed reservoir should resist the pressures and temperatures of the diffusion-welding and superplastic forming process. Therefore this non-deformable sealed reservoir is not damaged at the end of the process and can be re-used.

In contrast, Turner describes another technique in which, as shown in Figure 2 of Turner, a space 44 is linked to a tube 46 used for alternating injection or suction of gas (argon). Therefore, the space 44 is rather small. Moreover, the technique described in Turner to assemble the parts is "hot rolling"[2] and ***not diffusion-welding and superplastic***

[2]See Turner, column 5, lines 48 and 51

forming techniques, as recited in Claim 7. Further, it is respectfully submitted that Turner does not suggest the diffusion-welding and superplastic forming techniques recited in Claim 7 either. Therefore, in the hot rolling described in Turner, the parts to be assembled in Turner are placed under mechanical pressure (which will deform them), but ***not the space and the tube***, which are not placed under the rolling in Turner. Thus, the system/process of Turner cannot be adapted to the diffusion-welding and superplastic forming techniques of the process according to the invention recited in Claim 7 for at least the following reasons, known to one skilled in the art:

(1) if an isostatic pressure HIP is applied, the reservoir and the pipe of Turner would be deformed, so that the suction of gases resulting from the degradation of the binder ***could not*** be sucked through the pipe any more, and the diffusion-welding could not be implemented completely; and

(2) if a skilled man were to attempt to adapt Turner for the technique of diffusion bonding (by hot isostatic compaction), through very resistant pipes and reservoirs, it would nevertheless be very complicated to deal with the control of all the gas (argon) injection and sucking alternating operations for several parallel systems in order to manufacture several hollow blades at the same time. A sealed passage would have to be used between the chamber and the outlet of the pipes, which is very difficult to obtain and very costly. On the contrary, with the assembly according to the invention recited in Claim 7, there is no need for extra systems (pipes and vacuum systems), and thus it is possible to manufacture several blades in parallel together in the same chamber, the single reservoir per blade effecting the extraction and being re-usable.

"A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem."

In re Clay, 23 USPQ2d 1058, 1061 (Fed. Cir. 1992), see also MPEP §2141.01(a). As noted above, it is respectfully submitted that the method disclosed by Turner is very different from the method recited in Claim 7 and that the matter with which Turner deals would not logically commend itself to anyone's attention in considering the above-noted problem of concern.

Accordingly, it is respectfully submitted that Turner is non-analogous art with respect to the invention recited in Claim 7. Use of such non-analogous art is insufficient to present a *prima facie* case of obviousness. See *In re Oetiker* at 1446. See also *In re Clay* at 1061. Accordingly, Claim 7 (and Claims 8-10 dependent therefrom) is patentable over Wallis in view of Turner and Salt in view of Turner.

Since Applicant has not substantively amended the claims,[3] a further rejection of these claims based on newly cited prior art in the next communication **cannot properly be considered a Final Office Action**.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 7-10 is earnestly solicited.

[3]Claim 10 is amended herewith to correct the informality noted in the objection thereto.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representatives at the below listed telephone number.

Respectfully submitted,

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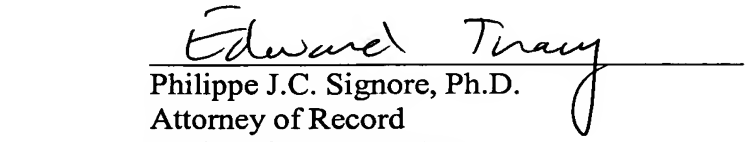

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